

ANNUAL FISH PASSAGE REPORT - ROCK ISLAND COLUMBIA RIVER, WASHINGTON, 1962

by Paul D. Zimmer and John H. Broughton

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UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

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**ANNUAL FISH PASSAGE REPORT -
ROCK ISLAND DAM
COLUMBIA RIVER, WASHINGTON
1962**

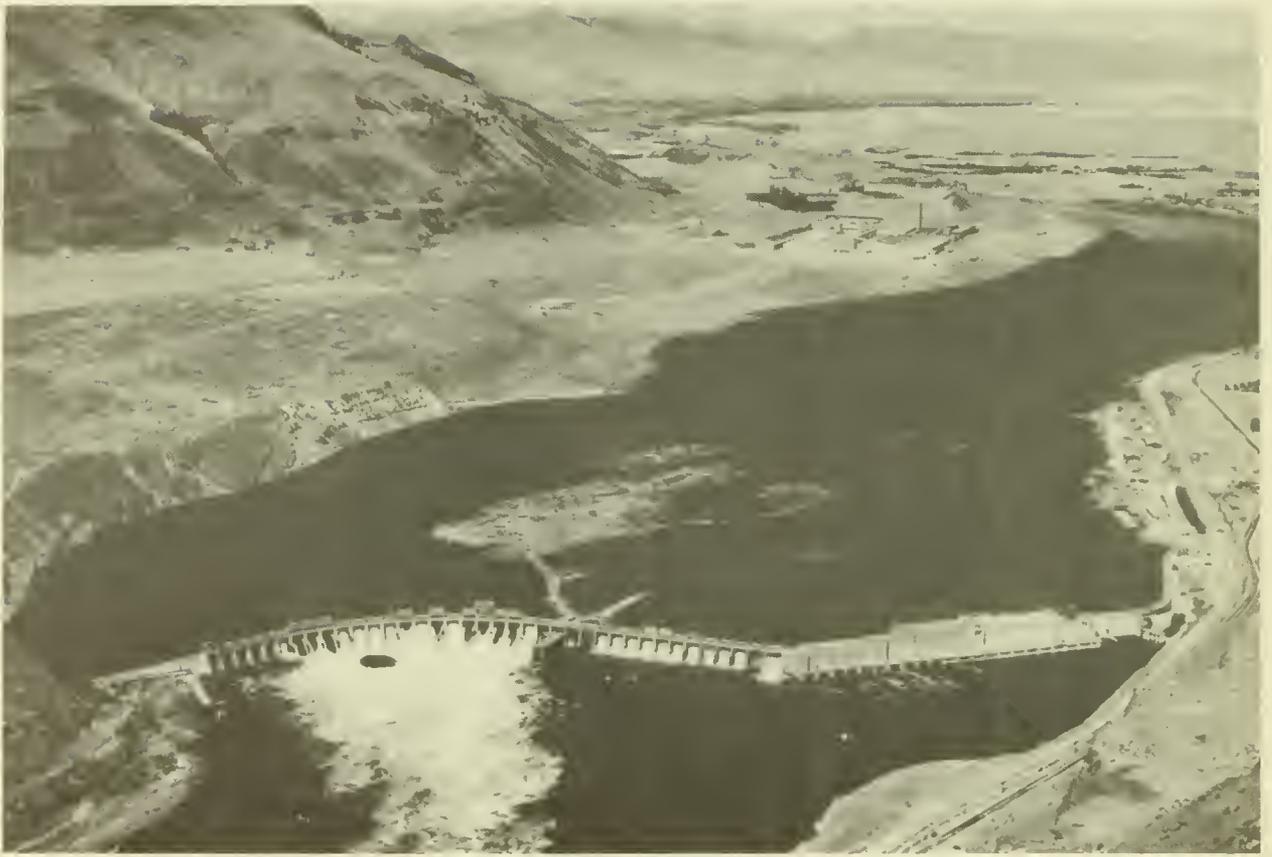
by

Paul D. Zimmer and John H. Broughton



United States Fish and Wildlife Service
Special Scientific Report--Fisheries No. 467

Washington, D.C.
August 1964



Rock Island Dam, Columbia River, Wash.

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ANNUAL FISH PASSAGE REPORT - ROCK ISLAND DAM

COLUMBIA RIVER, WASHINGTON, 1962

by

Paul D. Zimmer, Fishery Biologist (Management)
and John H. Broughton, Fishery Technician

ABSTRACT

Fish using the three fishways at Rock Island Dam in 1962 were counted from May 1 to October 27. Total number of salmon and steelhead trout exceeded the 1961 count by approximately 12,300 fish.

The 1962 count of 34,154 chinook salmon was well above the mean of 16,178 for the 29-year period 1933-61 and exceeded the 1961 count by approximately 1,100 fish. The 29,253 sockeye salmon counted was approximately 10,000 more than recorded in 1961 and approximately 57 percent of the 29-year mean of 51,920. The 737 coho salmon were approximately 500 more than recorded in 1947, year of previous high count, and greatly exceeded the 50 fish in 1961. The number of steelhead trout passing Rock Island Dam in 1962 was the highest recorded since counting began in 1933 and was more than twice the 29-year mean of 3,189. Fish other than salmon and steelhead trout passing through the fishways at Rock Island Dam in 1962 numbered 164,574 and exceeded the count of salmon and steelhead trout by approximately 93,000 fish.

Of 71,735 salmon and steelhead trout observed at Rock Island Dam in 1962, approximately 0.5 percent had some visible evidence of injury about the head or body.

INTRODUCTION

This report on passage of fish at Rock Island Dam during 1962 provides information on operation of fishways and numbers of fish utilizing upstream fish passage facilities.

Rock Island Dam, located on the Columbia River approximately 12 miles downstream from the city of Wenatchee, Wash., has been in operation since 1933. The plant is owned and operated by Chelan County Public Utility District No. 1.

Rock Island Dam is now equipped with three fishways: one located on the right bank, another on the left bank, and the third approximately in the center of the dam. Two of the fish ladders were placed in operation in 1933, and the third (middle ladder) was constructed in 1935-36. All three ladders have undergone significant modifications since initial construction.

Fish have been counted at Rock Island Dam annually since 1933--the longest continuous record in the Columbia River.

Included in this report are comments covering various fishery investigations at Rock Island Dam during 1962.

Note.--Paul D. Zimmer and John H. Broughton, Bureau of Commercial Fisheries Columbia Fisheries Program Office, U.S. Fish and Wildlife Service, Portland, Oreg.

COUNTING PROCEDURES

Fish counting in 1962 began on May 1 and terminated on October 27. From May 1 through September 13, fish were counted 16 hours each day, starting at 5 a.m. and ending at 9 p.m. From September 14 through October 27, counting was reduced to conform to the hours of daylight available.

Fish counters were allowed a 15-minute rest period at the end of each hour; and during all periods of noncounting, ladders were closed to passage of fish.

ENUMERATION OF FISH

Chinook Salmon, *Oncorhynchus tshawytscha*

The 1962 chinook salmon count of 34,154 (jacks included) was well above the mean of 16,178 for the 29-year period 1933-61. It was also greater than the 1961 count, but only 67 percent of the record count of 50,713 in 1957 (table 1). Monthly totals of chinook salmon counted are given in table 2. Maximum day's count of chinook salmon, jacks not included, in 1962 was 570 on August 10 (table 3). Tables 4 and 5 show semimonthly totals of the number and percentage of chinook salmon counted over each fish ladder. Of the chinook salmon (jacks excluded) which passed Rock Island Dam in 1962, 65.6 percent ascended the left ladder, while 13.5 and 20.9 percent ascended the middle and right ladders, respectively. The count of 8 chinook salmon on May 1, 1962, is in sharp contrast to the 137 on the same date in 1961.

Chinook Salmon Jacks

Some chinook salmon return from the ocean as mature fish in the year following their seaward migration and are referred to as "jacks." These fish are small and predominantly males. It has been determined at Rock Island Dam that up to June 30 of each year, jacks rarely, if ever, exceed 18 inches in length, while other chinook salmon are much larger. Likewise, from July 1 to the end of

the season, jacks rarely, if ever, exceed 22 inches in length. Consequently, jacks at Rock Island Dam are identified as all chinook salmon 18 inches or less in length prior to July 1 and 22 inches or less in length after that date. The maximum daily count of 173 jacks occurred on August 7 (table 3). The 7,118 fish recorded as jacks constitute 20.8 percent of the 1962 chinook salmon run as compared to 28.0 percent in 1961.

Table 5 shows the number and percentage of chinook salmon jacks counted over each fish ladder. Monthly totals are given in table 2.

Sockeye Salmon, *Oncorhynchus nerka* (Blueback or Red)

The 1962 sockeye salmon count of 29,253 was 56 percent of the 29-year mean of 51,920 (table 1). In 1962, peak of the run was reached on July 21, when 2,541 fish were counted through the fishways at Rock Island Dam.

Table 6 shows semimonthly totals of the number and percentage of sockeye salmon counted over each ladder. Of the sockeye salmon passing Rock Island Dam in 1962, 48.3 percent ascended the left ladder, while 21.7 and 30.0 percent ascended the middle and right ladders, respectively. Data pertaining to sockeye salmon daily counts are in tables 9-14. Monthly totals of sockeye salmon counted in 1962 are in table 2.

Coho Salmon, *Oncorhynchus kisutch* (Silver)

The 1962 coho salmon count of 737 fish greatly exceeded the 29-year mean of 60 and the 1961 count of 50 (table 1). Additional data are shown in tables 7, 12, 13, and 14. Maximum day's count of 70 fish occurred on September 27 (table 3). In 1961, maximum day's count of 8 fish occurred on October 4. The first coho salmon appearing at Rock Island Dam in 1962 was observed 14 days prior to the initial count of this species of salmon in 1961. Of the coho salmon passing the dam in 1962, 77.3 percent utilized the left ladder, while 3.9 and 18.8 percent ascended the middle and right ladders, respectively.

Steelhead Trout, *Salmo gairdneri*

The 1962 steelhead trout count of 7,591 was almost two and one-half times greater than the 29-year mean of 3,189 (table 1). The count of 15 steelhead on May 1, 1962, was slightly more than one-third the count of 44 on the same day in 1961.

The greatest monthly number of steelhead passing through the fishways in 1962 occurred in September when 3,429 fish were recorded. Peak monthly movement of these fish in 1961 also occurred in September when 3,508 fish were counted.

Of the steelhead passing Rock Island Dam in 1962, 70.7 percent utilized the left ladder, while 12.1 and 17.2 percent ascended the middle and right ladders, respectively.

Additional data pertaining to the movement of steelhead trout at Rock Island Dam are contained in tables 8-14.

Maximum day's count in 1962 was 284 on September 28 (table 3). In 1961, maximum day's count of 269 occurred on September 19.

Table 8 shows semimonthly totals of the number and percentage of steelhead trout counted over each fish ladder.

Miscellaneous Fish

In 1962, enumeration was made of species of fish other than salmon and steelhead trout passing Rock Island Dam (tables 15-20). No claims are made as to complete accuracy of identification of these fish. It is felt, however, that the degree of accuracy is consistent with that maintained at other dams on the Columbia River and as such may be used as a rough index of abundance of these fish. In 1962, approximately 165,000 fish other than salmon and steelhead trout passed Rock

Island Dam. Species of fish included are: largescale sucker, *Catostomus macrocheilus* Girard; longnose sucker, *Catostomus catostomus* (Forster); squawfish, *Ptychocheilus oregonense* (Richardson); Rocky Mountain whitefish, *Prosopium williamsoni* (Girard); Columbia River chub, *Mylocheilus caurinus* (Richardson); chisel-mouth, *Acrocheilus alutaceus* Agassiz and Pickering; carp, *Cyprinus carpio*, Linnaeus; lamprey, *Entosphenus tridentatus* (Gairdner); shad, *Alosa sapidissima* (Wilson); Dolly Varden trout, *Salvelinus malma* (Walbaum); and rainbow trout, *Salmo gairdneri* (Richardson). The number of miscellaneous species of fish passing through the fishways was 2.3 times the total salmon and steelhead trout recorded.

WEATHER AND RIVER DISCHARGE DATA

Headwater and tailwater elevations are plotted on figures 1 and 2, respectively. Air temperatures were taken twice daily by pocket thermometer. Water temperatures were taken at the middle fish ladder by recording thermograph. Daily records of weather conditions and stream flows are shown on tables 9-14. Daily river discharge data are plotted on figure 3. Maximum daily discharge of 326,900 c.f.s. on June 5, 1962, was slightly less than two-thirds the flow of 488,500 c.f.s. on the same day in 1961. Maximum daily discharge of 526,900 c.f.s. in 1961 occurred on June 12. Maximum water temperature in 1962 of 65 degrees occurred on July 28 and 29. Maximum water temperature in 1961 of 67 degrees occurred on August 21.

ACTIVITIES AND OBSERVATIONS

As in past years of counting at Rock Island Dam, some fish were observed with cuts or abrasions on the body. Of 71,735 salmon and steelhead observed as they passed over the counting boards, 364, or approximately 0.5 percent, had injuries of some sort either on the body or about the head. Of 40,764 salmon and steelhead observed in 1961, 1.0 percent had injuries about the head or body. Since in

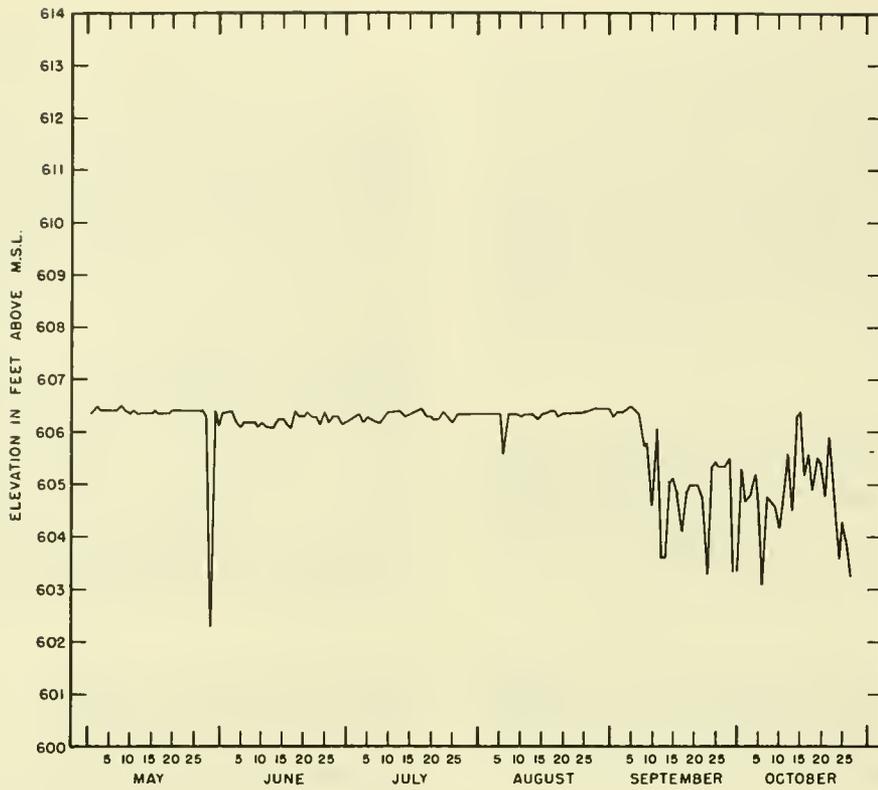


Figure 1.--Headwater elevations, Rock Island Dam, May 1 to October 27, 1962.

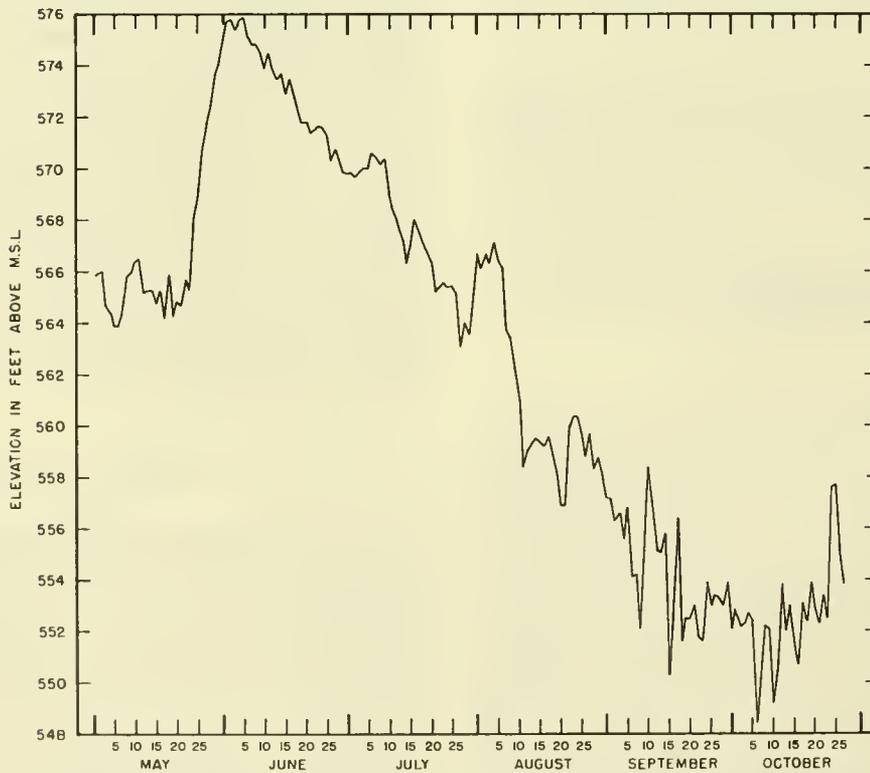


Figure 2.--Tailwater elevations, Rock Island Dam, May 1 to October 27, 1962.

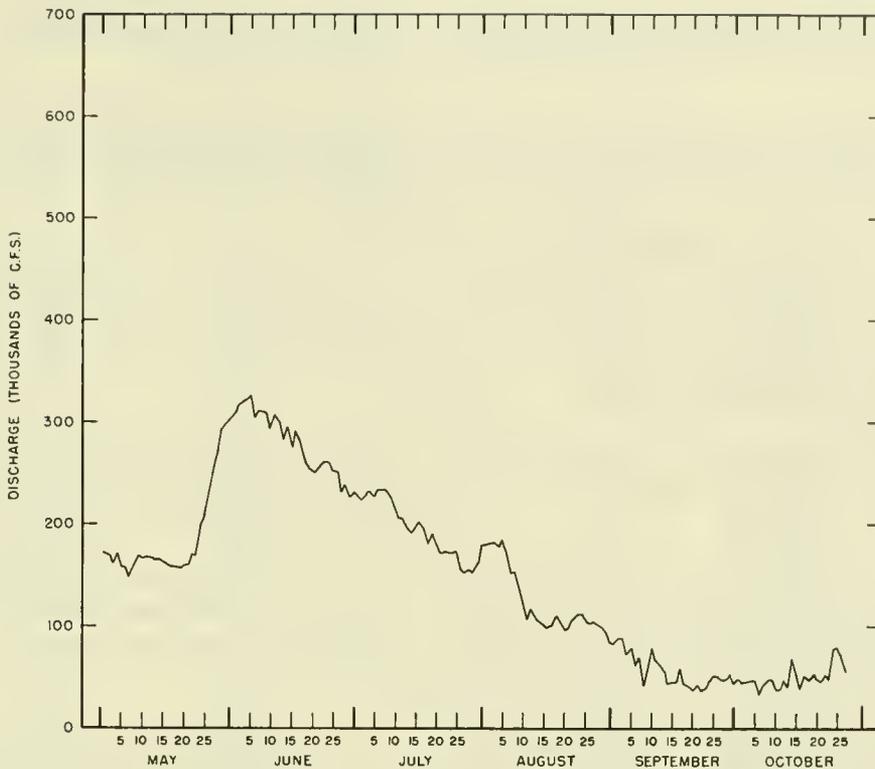


Figure 3.--Daily river discharge, Rock Island Dam, May 1 to October 27, 1962.

both years of observation the counters could see only the top and one side of the fish, the incidence of injury was probably greater than indicated. Percentages of injured fish observed in the left, middle, and right ladders in 1962 were 68, 10, and 22 percent, respectively.

In 1962, injuries were most numerous on large chinook and sockeye salmon (table 21). Of the 7,591 steelhead observed, only 16 fish showed evidence of injuries. Very few chinook salmon jacks displayed visible external injuries. It is of interest to note that of 737 coho salmon examined, only 3 fish showed evidence of visible injuries.

As in 1961, circular cuts or abrasions about 1 inch in diameter were more prevalent among the sockeye salmon. The most prevalent injury among the large chinook salmon was a deep cut along the side of the body or on the head. Some of these cuts or gashes were estimated to be as long as 6 inches and from

one-quarter to one-half inch deep. Some of the injuries were newly made, as evidenced by the presence of bloody tissue. Others appeared to have been made earlier, as scar tissue had formed. In some instances, large injuries or abrasions were covered with fungus growth. The greatest number of injuries occurred in July and August.

In the period July 17 to July 26, 1,024 sockeye salmon were trapped in the left bank fishway. These fish were tagged as part of a study to measure the effectiveness of the fishways at Rocky Reach Dam, located approximately 20 miles upstream from Rock Island Dam. All tagged fish were released into the forebay of Rock Island Dam. In the period July 21 to July 26, 16 of these tagged fish were again counted through the fishways at Rock Island Dam, indicating that some of the fish proceeded downstream after release and came up through the fishways a second time.

The five times that dewatering of the fishways at Rock Island Dam occurred in 1962 were as follows:

1. Right fish ladder, from 8:00 a.m., April 26, to 4:45 p.m., April 27, for routine maintenance work.

2. Left fish ladder, from 9:20 a.m. to 2:30 p.m., June 4, for repair of weir chains.

3. Left fish ladder, from 10:50 a.m. to 12:30 p.m., August 1, shutoff of auxiliary water to permit examination of fish ladder.

4. Right fish ladder, from 12:00 noon to 3:40 p.m., October 4, for repairs to ladder weirs.

5. Left fish ladder, October 22, closed for 50 minutes in the afternoon to permit recovery of items inadvertently dropped in fish ladder.

Frequent inspections were made of fishway operations by State and Federal personnel throughout the counting season. From May 27 to 29, studies were made by fisheries personnel and members of Chelan County Public Utility District of different spillway gate operations.

SUMMARY

1. The total Rock Island Dam count of salmon and steelhead in 1962 was 71,735, which was approximately 12,300 more than the 1961 count.

2. Annual counts of salmon and steelhead passing Rock Island Dam during the period 1933-62, inclusive, are given in table 1.

3. The chinook salmon count of 34,154 in 1962 was approximately 1,100 more than in 1961 and slightly more than one-half the peak year of 1957. In 1962, 7,118 jacks were re-

corded, representing 21 percent of that year's total of chinook salmon counted.

4. The sockeye count of 29,253, which exceeded the 1961 count by approximately 10,000 fish, was approximately 22,700 less than the 29-year mean of 51,920.

5. Very few coho salmon have appeared at Rock Island Dam in the period 1933-62. The 1962 count of 737 fish was more than three times the previous high count of 229 in 1947.

6. The steelhead count of 7,591 in 1962 was almost two and one-half times greater than the 29-year mean of 3,189 and was the highest recorded in the period 1933-62.

7. In 1962, a greater percentage of salmon and steelhead utilized the left bank fish ladder than used either the middle or right bank ladders.

8. Fish counting in 1962 began on May 1 and terminated October 27. From May 1 through September 13, fish were counted for 16 hours each day. From September 14 through October 27, counting was reduced to conform to the hours of daylight available.

9. In 1962 the maximum number of salmonids counted in 1 day (2,692) was on July 21.

10. Season's total of fish other than salmon and steelhead trout passing Rock Island Dam in 1962 was 164,574 and was composed of the following: sucker, 100,401; squawfish, 10,944; whitefish, 38,309; chub, 10,105; carp, 1,756; shad, 1; Dolly Varden and rainbow trout, 61; and lamprey, 2,997.

11. Of 71,735 fish examined, on the top and one side only as they passed over the counting boards, approximately 0.5 percent had injuries of some type either on the body or about the head. Greatest numbers of injured fish occurred in July and August. Injuries were most numerous on large chinook and sockeye salmon.

Table 1.--Annual counts and periods of counting of salmon and steelhead trout at Rock Island Dam, 1933-62¹

[Number of fish]

| Year | Chinook salmon | Steelhead trout | sockeye salmon | Coho salmon | Total | Period of count |
|------|----------------|-----------------|----------------|-------------|---------|-----------------|
| 1933 | 5,668 | 1,055 | 40,737 | 182 | 47,642 | 7/21- 9/23 |
| 1934 | 7,115 | 583 | 2,227 | 69 | 9,994 | 7/31-12/31 |
| 1935 | 16,305 | 5,418 | 14,013 | 11 | 35,747 | 1/1 -11/15 |
| 1936 | 7,290 | 2,373 | 16,500 | 0 | 26,163 | 5/5 - 9/29 |
| 1937 | 5,133 | 2,214 | 15,089 | 58 | 22,494 | 5/11-10/16 |
| 1938 | 5,795 | 2,399 | 17,095 | 78 | 25,367 | 4/12-10/29 |
| 1939 | 11,206 | 5,425 | 19,591 | 13 | 36,235 | 5/1 -12/9 |
| 1940 | 9,512 | 5,220 | 27,093 | 2 | 41,827 | 3/5 -12/10 |
| 1941 | 2,507 | 3,513 | 963 | 28 | 7,011 | 4/1 -12/8 |
| 1942 | 6,833 | 3,693 | 16,340 | 1 | 26,867 | 4/10-11/30 |
| 1943 | 11,129 | 2,315 | 17,522 | 15 | 30,981 | 4/5 -11/30 |
| 1944 | 3,364 | 1,338 | 5,035 | 186 | 9,923 | 4/12-11/17 |
| 1945 | 5,699 | 1,118 | 7,148 | 166 | 14,131 | 4/4 -12/17 |
| 1946 | 9,981 | 1,779 | 45,030 | 32 | 56,822 | 1/4 -11/5 |
| 1947 | 11,717 | 1,971 | 79,831 | 229 | 93,748 | 1/1 -11/27 |
| 1948 | 7,083 | 2,360 | 84,184 | 29 | 93,656 | 1/1 -11/16 |
| 1949 | 12,353 | 2,470 | 18,600 | 40 | 33,463 | 1/1 -11/15 |
| 1950 | 10,348 | 1,852 | 50,134 | 72 | 62,406 | 1/1 -11/23 |
| 1951 | 18,752 | 3,121 | 101,826 | 8 | 123,707 | 1/1 -11/18 |
| 1952 | 20,121 | 2,883 | 114,349 | 27 | 137,380 | 1/1 -11/18 |
| 1953 | 31,080 | 4,001 | 151,747 | 40 | 186,868 | 1/1 -12/31 |
| 1954 | 33,283 | 5,406 | 91,234 | 44 | 129,967 | 1/1 -12/31 |
| 1955 | 25,658 | 3,141 | 155,055 | 39 | 183,893 | 5/1 - 9/30 |
| 1956 | 25,085 | 1,540 | 92,443 | 29 | 119,097 | 5/1 - 9/29 |
| 1957 | 50,713 | 3,927 | 71,261 | 27 | 125,928 | 5/1 - 9/28 |
| 1958 | 32,457 | 3,970 | 98,695 | 60 | 135,182 | 5/1 - 9/30 |
| 1959 | 23,352 | 4,138 | 72,351 | 118 | 99,959 | 5/4 - 9/30 |
| 1960 | 26,550 | 6,226 | 60,341 | 94 | 93,211 | 5/2 -10/29 |
| 1961 | 33,067 | 7,042 | 19,233 | 50 | 59,392 | 5/1 -10/27 |
| 1962 | 34,154 | 7,591 | 29,253 | 737 | 71,735 | 5/1 -10/27 |

¹ Annual counts of salmon and steelhead trout given are now considered to be the official record of fish passing Rock Island Dam in period 1933-62.

Table 2.--Monthly number of salmon and steelhead counted at
Rock Island Dam, 1962

| Species | May | June | July | August | Sept. | Oct. | Total |
|-----------------|-------|-------|--------|--------|--------|-------|--------|
| Chinook | 5,472 | 2,318 | 6,576 | 7,392 | 4,709 | 569 | 27,036 |
| Chinook (jacks) | 394 | 589 | 1,600 | 2,980 | 1,454 | 101 | 7,118 |
| Steelhead | 731 | 58 | 158 | 1,384 | 3,429 | 1,831 | 7,591 |
| Sockeye | 2 | 50 | 24,762 | 4,143 | 282 | 14 | 29,253 |
| Coho | 0 | 0 | 0 | 1 | 504 | 232 | 737 |
| Totals | 6,599 | 3,015 | 33,096 | 15,900 | 10,378 | 2,747 | 71,735 |

Table 3.--Maximum daily counts, salmon and steelhead,
Rock Island Dam, 1962

| Species | Date | Number of fish |
|------------------------|----------|-------------------|
| Chinook (except jacks) | Aug. 10 | 570 |
| Chinook (jacks) | Aug. 7 | 173 |
| Steelhead | Sept. 28 | 284 |
| Sockeye | July 21 | 2,541 |
| Coho | Sept. 27 | 70 |

Table 4.--Number and percent of chinook salmon counted over
each fish ladder, Rock Island Dam, 1962
(jacks not included)

| Date | Left ladder | | Middle ladder | | Right ladder | | Total |
|---------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | <i>Number</i> | <i>Percent</i> | <i>Number</i> | <i>Percent</i> | <i>Number</i> | <i>Percent</i> | <i>Number</i> |
| May 1-15 | 1,784 | 51.9 | 894 | 26.0 | 757 | 22.1 | 3,435 |
| May 16-31 | 1,010 | 49.6 | 432 | 21.2 | 595 | 29.2 | 2,037 |
| June 1-15 | 300 | 48.2 | 261 | 42.0 | 61 | 9.8 | 622 |
| June 16-30 | 895 | 52.8 | 368 | 21.7 | 433 | 25.5 | 1,696 |
| July 1-15 | 2,512 | 64.7 | 453 | 11.7 | 920 | 23.6 | 3,885 |
| July 16-31 | 1,915 | 71.2 | 266 | 9.9 | 510 | 18.9 | 2,691 |
| Aug. 1-15 | 3,918 | 73.8 | 407 | 7.7 | 986 | 18.5 | 5,311 |
| Aug. 16-31 | 1,715 | 82.4 | 143 | 6.9 | 223 | 10.7 | 2,081 |
| Sept. 1-15 | 1,782 | 75.7 | 159 | 6.8 | 413 | 17.5 | 2,354 |
| Sept. 16-30 | 1,549 | 65.8 | 203 | 8.6 | 603 | 25.6 | 2,355 |
| Oct. 1-15 | 297 | 64.2 | 44 | 9.5 | 122 | 26.3 | 463 |
| Oct. 16-27 | 68 | 64.2 | 16 | 15.1 | 22 | 20.7 | 106 |
| Totals | 17,745 | 65.6 | 3,646 | 13.5 | 5,645 | 20.9 | 27,036 |

Table 5.--Number and percent of chinook salmon jacks counted over each fish ladder, Rock Island Dam, 1962

| Date | | Left ladder | | Middle ladder | | Right ladder | | Total |
|--------|-------|---------------|----------------|---------------|----------------|---------------|----------------|-------|
| | | <i>Number</i> | <i>Percent</i> | <i>Number</i> | <i>Percent</i> | <i>Number</i> | <i>Percent</i> | |
| May | 1-15 | 56 | 34.2 | 54 | 32.9 | 54 | 32.9 | 164 |
| May | 16-31 | 104 | 45.2 | 81 | 35.2 | 45 | 19.6 | 230 |
| June | 1-15 | 121 | 40.6 | 124 | 41.6 | 53 | 17.8 | 298 |
| June | 16-30 | 107 | 36.8 | 102 | 35.0 | 82 | 28.2 | 291 |
| July | 1-15 | 125 | 37.1 | 93 | 27.6 | 119 | 35.3 | 337 |
| July | 16-31 | 737 | 58.3 | 213 | 16.9 | 313 | 24.8 | 1,263 |
| Aug. | 1-15 | 1,401 | 77.7 | 106 | 5.9 | 297 | 16.4 | 1,804 |
| Aug. | 16-31 | 1,040 | 88.4 | 68 | 5.8 | 68 | 5.8 | 1,176 |
| Sept. | 1-15 | 657 | 76.4 | 45 | 5.2 | 158 | 18.4 | 860 |
| Sept. | 16-30 | 430 | 72.4 | 38 | 6.4 | 126 | 21.2 | 594 |
| Oct. | 1-15 | 63 | 71.6 | 7 | 7.9 | 18 | 20.5 | 88 |
| Oct. | 16-27 | 8 | 61.5 | 1 | 7.7 | 4 | 30.8 | 13 |
| Totals | | 4,849 | 68.1 | 932 | 13.1 | 1,337 | 18.8 | 7,118 |

Table 6.--Number and percent of sockeye salmon counted over each ladder, Rock Island Dam, 1962

| Date | Left ladder | | Middle ladder | | Right ladder | | Total |
|-------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | <i>Number</i> | <i>Percent</i> | <i>Number</i> | <i>Percent</i> | <i>Number</i> | <i>Percent</i> | <i>Number</i> |
| May 1-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| May 16-31 | 1 | 50.0 | 0 | 0 | 1 | 50.0 | 2 |
| June 1-15 | 4 | 80.0 | 1 | 20.0 | 0 | 0 | 5 |
| June 16-30 | 22 | 48.9 | 10 | 22.2 | 13 | 28.9 | 45 |
| July 1-15 | 1,604 | 47.3 | 744 | 21.9 | 1,044 | 30.8 | 3,392 |
| July 16-31 | 10,018 | 46.9 | 4,739 | 22.2 | 6,613 | 30.9 | 21,370 |
| Aug. 1-15 | 1,697 | 50.2 | 716 | 21.2 | 967 | 28.6 | 3,380 |
| Aug. 16-31 | 546 | 71.6 | 104 | 13.6 | 113 | 14.8 | 763 |
| Sept. 1-15 | 165 | 72.7 | 25 | 11.0 | 37 | 16.3 | 227 |
| Sept. 16-30 | 44 | 80.0 | 3 | 5.5 | 8 | 14.5 | 55 |
| Oct. 1-15 | 14 | 100.0 | 0 | 0 | 0 | 0 | 14 |
| Oct. 16-27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Totals | 14,115 | 48.3 | 6,342 | 21.7 | 8,796 | 30.0 | 29,253 |

Table 7.--Number and percent of coho salmon counted over each ladder, Rock Island Dam, 1962

| Date | Left ladder | | Middle ladder | | Right ladder | | Total |
|-------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | <i>Number</i> | <i>Percent</i> | <i>Number</i> | <i>Percent</i> | <i>Number</i> | <i>Percent</i> | <i>Number</i> |
| May 1-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| May 16-31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| June 1-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| June 16-30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 1-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| July 16-31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Aug. 1-15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Aug. 16-31 | 0 | 0 | 0 | 0 | 1 | 100.00 | 1 |
| Sept. 1-15 | 28 | 93.3 | 0 | 0 | 2 | 6.7 | 30 |
| Sept. 16-30 | 354 | 74.7 | 22 | 4.6 | 98 | 20.7 | 474 |
| Oct. 1-15 | 169 | 81.2 | 6 | 2.9 | 33 | 15.9 | 208 |
| Oct. 16-27 | 19 | 79.2 | 1 | 4.1 | 4 | 16.7 | 24 |
| Totals | 570 | 77.3 | 29 | 3.9 | 138 | 18.8 | 737 |

Table 8.--Number and percent of steelhead trout counted over each ladder, Rock Island Dam, 1962

| Date | Left ladder | | Middle ladder | | Right ladder | | Total |
|-------------|---------------|----------------|---------------|----------------|---------------|----------------|---------------|
| | <i>Number</i> | <i>Percent</i> | <i>Number</i> | <i>Percent</i> | <i>Number</i> | <i>Percent</i> | <i>Number</i> |
| May 1-15 | 136 | 29.4 | 166 | 35.9 | 161 | 34.7 | 463 |
| May 16-31 | 96 | 35.8 | 71 | 26.5 | 101 | 37.7 | 268 |
| June 1-15 | 8 | 19.5 | 26 | 63.4 | 7 | 17.1 | 41 |
| June 16-30 | 12 | 70.6 | 4 | 23.5 | 1 | 5.9 | 17 |
| July 1-15 | 9 | 64.3 | 1 | 7.1 | 4 | 28.6 | 14 |
| July 16-31 | 70 | 48.6 | 33 | 22.9 | 41 | 28.5 | 144 |
| Aug. 1-15 | 361 | 67.7 | 46 | 8.6 | 126 | 23.7 | 533 |
| Aug. 16-31 | 654 | 76.8 | 80 | 9.4 | 117 | 13.8 | 851 |
| Sept. 1-15 | 794 | 76.1 | 81 | 7.8 | 168 | 16.1 | 1,043 |
| Sept. 16-30 | 1,844 | 77.3 | 213 | 8.9 | 329 | 13.8 | 2,386 |
| Oct. 1-15 | 1,047 | 75.8 | 153 | 11.1 | 182 | 13.1 | 1,382 |
| Oct. 16-27 | 334 | 74.4 | 42 | 9.4 | 73 | 16.2 | 449 |
| Totals | 5,365 | 70.7 | 916 | 12.1 | 1,310 | 17.2 | 7,591 |

Table 9.--Daily temperatures, stream flow, and fish count data, Rock Island Dam, May 1962

| Date | Air temperatures ¹ | | Water temperatures ² | | Stream flow | Chinook | Sockeye | Coho | Steelhead | Total |
|-------|-------------------------------|------|---------------------------------|------|-------------|---------|---------|------|-----------|-------|
| | Max. | Min. | Max. | Min. | | | | | | |
| May 1 | 74 | 40 | 46 | 46 | 173,400 | 8 | 0 | 0 | 15 | 23 |
| 2 | 67 | 45 | 47 | 46 | 170,000 | 15 | 0 | 0 | 21 | 36 |
| 3 | 60 | 45 | 47 | 46 | 162,200 | 8 | 0 | 0 | 16 | 24 |
| 4 | 65 | 33 | 47 | 46 | 172,300 | 20 | 0 | 0 | 19 | 39 |
| 5 | 60 | 36 | 48 | 47 | 155,800 | 41 | 0 | 0 | 26 | 67 |
| 6 | 64 | 41 | 47 | 47 | 155,800 | 309 | 0 | 0 | 56 | 365 |
| 7 | 64 | 40 | 48 | 47 | 147,800 | 196 | 0 | 0 | 35 | 231 |
| 8 | 60 | 50 | 48 | 48 | 162,200 | 383 | 0 | 0 | 15 | 398 |
| 9 | 58 | 46 | 50 | 48 | 168,800 | 473 | 0 | 0 | 85 | 558 |
| 10 | 60 | 48 | 50 | 49 | 166,500 | 350 | 0 | 0 | 29 | 379 |
| 11 | 60 | 46 | 51 | 50 | 167,700 | 353 | 0 | 0 | 25 | 378 |
| 12 | 65 | 45 | 51 | 50 | 167,700 | 302 | 0 | 0 | 31 | 333 |
| 13 | 60 | 47 | 51 | 50 | 165,400 | 514 | 0 | 0 | 41 | 555 |
| 14 | 75 | 46 | 52 | 50 | 165,400 | 315 | 0 | 0 | 16 | 331 |
| 15 | 67 | 52 | 52 | 51 | 163,300 | 312 | 0 | 0 | 33 | 345 |
| 16 | 78 | 50 | 52 | 52 | 160,000 | 150 | 0 | 0 | 21 | 171 |
| 17 | 75 | 60 | 52 | 51 | 155,800 | 352 | 0 | 0 | 11 | 363 |
| 18 | 74 | 50 | 52 | 51 | 154,800 | 226 | 0 | 0 | 24 | 250 |
| 19 | 68 | 47 | 52 | 51 | 155,800 | 288 | 0 | 0 | 28 | 316 |
| 20 | 74 | 54 | 52 | 51 | 161,200 | 220 | 0 | 0 | 28 | 248 |
| 21 | 79 | 54 | 53 | 51 | 160,100 | 83 | 0 | 0 | 11 | 94 |
| 22 | 80 | 51 | 52 | 52 | 171,100 | 136 | 0 | 0 | 15 | 151 |
| 23 | 52 | 51 | 52 | 51 | 168,800 | 152 | 0 | 0 | 12 | 164 |
| 24 | 65 | 51 | 52 | 51 | 198,000 | 84 | 0 | 0 | 17 | 101 |
| 25 | 65 | 50 | 52 | 51 | 209,900 | 121 | 0 | 0 | 15 | 136 |
| 26 | 75 | 54 | 52 | 51 | 231,500 | 122 | 1 | 0 | 14 | 137 |
| 27 | 75 | 54 | 52 | 51 | 252,300 | 83 | 1 | 0 | 17 | 101 |
| 28 | 72 | 61 | 53 | 51 | 267,500 | 40 | 0 | 0 | 7 | 47 |
| 29 | 68 | 52 | 52 | 52 | 293,500 | 45 | 0 | 0 | 17 | 62 |
| 30 | 68 | 50 | 53 | 52 | 299,200 | 59 | 0 | 0 | 23 | 82 |
| 31 | 72 | 54 | 53 | 52 | 301,100 | 106 | 0 | 0 | 8 | 114 |

¹ Air temperatures, taken with pocket thermometer, are given in degrees Fahrenheit.

² Water temperatures, taken with recording thermograph at middle ladder, are given in degrees Fahrenheit.

Table 10.--Daily temperatures, stream flow, and fish count data, Rock Island Dam, June 1962

| Date | Air temperatures ¹ | | Water temperatures ² | | Stream flow C. f. s. | Chinook Number | Sockeye Number | Coho Number | Steelhead Number | Total Number |
|--------|-------------------------------|------------|---------------------------------|------------|-------------------------|-------------------|-------------------|----------------|---------------------|-----------------|
| | Max. °F | Min. °F | Max. °F | Min. °F | | | | | | |
| June 1 | 75 | 52 | 54 | 52 | 309,900 | 84 | 0 | 0 | 10 | 94 |
| 2 | 63 | 58 | 53 | 53 | 315,100 | 79 | 0 | 0 | 1 | 80 |
| 3 | 73 | 42 | 53 | 52 | 318,600 | 73 | 0 | 0 | 6 | 79 |
| 4 | 73 | 45 | 54 | 52 | 320,300 | 48 | 0 | 0 | 5 | 53 |
| 5 | 66 | 52 | 55 | 53 | 326,900 | 83 | 0 | 0 | 1 | 84 |
| 6 | 77 | 49 | 55 | 54 | 306,400 | 63 | 0 | 0 | 0 | 63 |
| 7 | 86 | 58 | 56 | 54 | 311,600 | 58 | 0 | 0 | 6 | 64 |
| 8 | 89 | 63 | 57 | 55 | 308,100 | 82 | 1 | 0 | 3 | 86 |
| 9 | 80 | 56 | 57 | 55 | 291,600 | 50 | 0 | 0 | 3 | 53 |
| 10 | 76 | 57 | 57 | 55 | 297,300 | 63 | 3 | 0 | 1 | 67 |
| 11 | 82 | 52 | 57 | 55 | 308,100 | 40 | 1 | 0 | 1 | 42 |
| 12 | 76 | 60 | 57 | 56 | 302,900 | 87 | 0 | 0 | 3 | 90 |
| 13 | 62 | 51 | 56 | 55 | 282,000 | 68 | 0 | 0 | 1 | 69 |
| 14 | 82 | 53 | 56 | 55 | 295,400 | 21 | 0 | 0 | 0 | 21 |
| 15 | 91 | 62 | 57 | 55 | 276,600 | 21 | 0 | 0 | 0 | 21 |
| 16 | 88 | 66 | 57 | 56 | 291,600 | 64 | 0 | 0 | 1 | 65 |
| 17 | 83 | 61 | 57 | 56 | 282,000 | 20 | 1 | 0 | 1 | 22 |
| 18 | 88 | 59 | 57 | 56 | 265,700 | 51 | 0 | 0 | 2 | 53 |
| 19 | 91 | 60 | 57 | 56 | 255,600 | 56 | 1 | 0 | 1 | 58 |
| 20 | 89 | 64 | 57 | 56 | 252,300 | 86 | 3 | 0 | 2 | 91 |
| 21 | 88 | 60 | 58 | 56 | 250,600 | 53 | 2 | 0 | 0 | 55 |
| 22 | 90 | 64 | 58 | 57 | 257,300 | 104 | 17 | 0 | 0 | 121 |
| 23 | 86 | 62 | 58 | 57 | 260,900 | 69 | 3 | 0 | 2 | 74 |
| 24 | 95 | 66 | 58 | 57 | 260,900 | 100 | 0 | 0 | 0 | 100 |
| 25 | 92 | 70 | 58 | 57 | 253,900 | 76 | 0 | 0 | 1 | 77 |
| 26 | 75 | 56 | 59 | 58 | 252,300 | 156 | 2 | 0 | 0 | 158 |
| 27 | 79 | 54 | 59 | 58 | 233,100 | 169 | 3 | 0 | 2 | 174 |
| 28 | 85 | 52 | 59 | 58 | 237,800 | 173 | 1 | 0 | 1 | 175 |
| 29 | 93 | 58 | 59 | 58 | 228,500 | 469 | 5 | 0 | 2 | 476 |
| 30 | 86 | 62 | 59 | 58 | 231,500 | 341 | 7 | 0 | 2 | 350 |

¹ Air temperatures, taken with pocket thermometer, are given in degrees Fahrenheit.

² Water temperatures, taken with recording thermograph at middle ladder, are given in degrees Fahrenheit.

Table 11.--Daily temperatures, stream flow, and fish count data, Rock Island Dam, July 1962

| Date | Air temperatures ¹ | | Water temperatures ² | | Stream flow C. f. s. | Chinook Number | Sockeye Number | Coho Number | Steelhead Number | Total Number |
|--------|-------------------------------|------------|---------------------------------|------------|-------------------------|-------------------|-------------------|----------------|---------------------|-----------------|
| | Max. °F | Min. °F | Max. °F | Min. °F | | | | | | |
| July 1 | 72 | 58 | 59 | 58 | 227,000 | 409 | 40 | 0 | 0 | 449 |
| 2 | 75 | 45 | 59 | 58 | 224,100 | 345 | 16 | 0 | 2 | 363 |
| 3 | 72 | 53 | 59 | 58 | 230,000 | 319 | 23 | 0 | 1 | 343 |
| 4 | 79 | 52 | 59 | 58 | 233,100 | 283 | 36 | 0 | 1 | 320 |
| 5 | 70 | 56 | 59 | 58 | 228,500 | 299 | 54 | 0 | 0 | 353 |
| 6 | 72 | 53 | 59 | 58 | 234,700 | 288 | 69 | 0 | 3 | 360 |
| 7 | 84 | 52 | 60 | 58 | 234,700 | 113 | 90 | 0 | 2 | 205 |
| 8 | 91 | 52 | 60 | 59 | 237,800 | 367 | 163 | 0 | 1 | 531 |
| 9 | 91 | 52 | 60 | 60 | 225,500 | 209 | 96 | 0 | 0 | 305 |
| 10 | 92 | 64 | 61 | 60 | 215,300 | 271 | 140 | 0 | 0 | 411 |
| 11 | 94 | 68 | 61 | 60 | 207,200 | 336 | 292 | 0 | 0 | 628 |
| 12 | 87 | 66 | 62 | 61 | 204,500 | 278 | 389 | 0 | 0 | 667 |
| 13 | 75 | 63 | 62 | 60 | 195,400 | 267 | 416 | 0 | 0 | 683 |
| 14 | 83 | 59 | 62 | 60 | 186,500 | 200 | 636 | 0 | 0 | 839 |
| 15 | 85 | 54 | 62 | 61 | 195,400 | 238 | 932 | 0 | 1 | 1,171 |
| 16 | 83 | 61 | 62 | 61 | 201,800 | 239 | 745 | 0 | 1 | 985 |
| 17 | 73 | 57 | 61 | 61 | 196,700 | 273 | 788 | 0 | 3 | 1,064 |
| 18 | 85 | 58 | 61 | 60 | 181,700 | 196 | 1,272 | 0 | 6 | 1,474 |
| 19 | 88 | 59 | 61 | 60 | 190,200 | 187 | 1,587 | 0 | 2 | 1,776 |
| 20 | 91 | 63 | 61 | 61 | 182,900 | 206 | 1,733 | 0 | 6 | 1,945 |
| 21 | 97 | 67 | 61 | 61 | 171,100 | 151 | 2,541 | 0 | 0 | 2,692 |
| 22 | 94 | 68 | 62 | 61 | 173,400 | 187 | 2,133 | 0 | 12 | 2,332 |
| 23 | 108 | 73 | 63 | 62 | 172,300 | 273 | 1,702 | 0 | 2 | 1,977 |
| 24 | 97 | 74 | 63 | 62 | 172,300 | 303 | 1,956 | 0 | 5 | 2,264 |
| 25 | 104 | 74 | 63 | 62 | 174,600 | 210 | 1,237 | 0 | 5 | 1,452 |
| 26 | 102 | 76 | 64 | 62 | 156,900 | 270 | 1,544 | 0 | 7 | 1,821 |
| 27 | 95 | 72 | 64 | 63 | 151,800 | 248 | 1,160 | 0 | 10 | 1,418 |
| 28 | 102 | 71 | 65 | 63 | 156,900 | 165 | 880 | 0 | 18 | 1,063 |
| 29 | 99 | 73 | 65 | 63 | 152,800 | 263 | 853 | 0 | 24 | 1,140 |
| 30 | 102 | 68 | 64 | 62 | 165,400 | 333 | 573 | 0 | 18 | 924 |
| 31 | 98 | 68 | 63 | 62 | 179,200 | 450 | 666 | 0 | 25 | 1,141 |

¹ Air temperatures, taken with pocket thermometer, are given in degrees Fahrenheit.

² Water temperatures, taken with recording thermograph at middle ladder, are given in degrees Fahrenheit.

Table 12.--Daily temperatures, stream flow, and fish count data, Rock Island Dam, August 1962

| Date | Air temperatures ¹ | | Water temperatures ² | | Stream flow C. f. s. | Chinook Number | Sockeye Number | Coho Number | Steelhead Number | Total Number |
|--------|-------------------------------|------------|---------------------------------|------------|-------------------------|-------------------|-------------------|----------------|---------------------|-----------------|
| | Max. °F | Min. °F | Max. °F | Min. °F | | | | | | |
| Aug. 1 | 95 | 70 | 63 | 62 | 180,400 | 305 | 503 | 0 | 17 | 825 |
| 2 | 92 | 71 | 62 | 61 | 181,700 | 614 | 583 | 0 | 40 | 1,237 |
| 3 | 75 | 61 | 62 | 62 | 182,900 | 466 | 489 | 0 | 17 | 972 |
| 4 | 75 | 57 | 63 | 62 | 179,200 | 558 | 360 | 0 | 26 | 944 |
| 5 | 78 | 57 | 62 | 61 | 186,500 | 450 | 273 | 0 | 47 | 770 |
| 6 | 74 | 61 | 62 | 62 | 173,400 | 541 | 196 | 0 | 27 | 764 |
| 7 | 71 | 61 | 62 | 62 | 151,800 | 681 | 174 | 0 | 27 | 882 |
| 8 | 80 | 57 | 63 | 62 | 152,800 | 507 | 168 | 0 | 34 | 709 |
| 9 | 85 | 56 | 62 | 61 | 139,100 | 316 | 94 | 0 | 31 | 441 |
| 10 | 84 | 61 | 62 | 60 | 123,300 | 693 | 76 | 0 | 37 | 806 |
| 11 | 90 | 63 | 61 | 60 | 107,900 | 586 | 116 | 0 | 48 | 750 |
| 12 | 86 | 62 | 61 | 60 | 116,600 | 196 | 116 | 0 | 49 | 361 |
| 13 | 85 | 56 | 62 | 61 | 108,700 | 652 | 100 | 0 | 41 | 793 |
| 14 | 91 | 58 | 62 | 61 | 104,800 | 272 | 67 | 0 | 48 | 387 |
| 15 | 93 | 62 | 62 | 62 | 101,900 | 278 | 65 | 0 | 44 | 387 |
| 16 | 88 | 64 | 62 | 62 | 99,800 | 224 | 101 | 0 | 61 | 386 |
| 17 | 88 | 61 | 63 | 62 | 101,900 | 207 | 59 | 0 | 60 | 326 |
| 18 | 84 | 59 | 62 | 62 | 110,900 | 308 | 65 | 0 | 44 | 417 |
| 19 | 90 | 61 | 62 | 62 | 104,800 | 174 | 52 | 0 | 46 | 272 |
| 20 | 92 | 65 | 63 | 62 | 97,000 | 214 | 63 | 0 | 59 | 336 |
| 21 | 84 | 64 | 63 | 62 | 97,000 | 251 | 43 | 0 | 37 | 331 |
| 22 | 87 | 60 | 63 | 62 | 108,600 | 371 | 61 | 0 | 50 | 482 |
| 23 | 87 | 59 | 63 | 62 | 111,700 | 129 | 38 | 0 | 57 | 224 |
| 24 | 92 | 66 | 63 | 62 | 111,300 | 133 | 30 | 0 | 51 | 214 |
| 25 | 87 | 65 | 63 | 62 | 107,400 | 165 | 38 | 0 | 43 | 246 |
| 26 | 75 | 63 | 63 | 62 | 104,800 | 206 | 29 | 0 | 75 | 310 |
| 27 | 74 | 54 | 62 | 61 | 106,300 | 248 | 54 | 1 | 66 | 369 |
| 28 | 75 | 61 | 62 | 61 | 101,900 | 190 | 39 | 0 | 49 | 278 |
| 29 | 83 | 54 | 62 | 61 | 97,700 | 163 | 38 | 0 | 51 | 252 |
| 30 | 87 | 56 | 62 | 62 | 94,300 | 152 | 36 | 0 | 64 | 252 |
| 31 | 93 | 62 | 63 | 62 | 84,900 | 122 | 17 | 0 | 38 | 177 |

¹ Air temperatures, taken with pocket thermometer, are given in degrees Fahrenheit.

² Water temperatures, taken with recording thermograph at middle ladder, are given in degrees Fahrenheit.

Table 13.--Daily Temperatures, stream flow, and fish count data, Rock Island Dam, September 1962

| Date | Air temperatures ¹ | | Water temperatures ² | | Stream flow C. f. s. | Chinook Number | Sockeye Number | Coho Number | Steelhead Number | Total Number |
|---------|-------------------------------|------------|---------------------------------|------------|-------------------------|-------------------|-------------------|----------------|---------------------|-----------------|
| | Max. °F | Min. °F | Max. °F | Min. °F | | | | | | |
| Sept. 1 | 92 | 66 | 63 | 62 | 83,600 | 245 | 35 | 0 | 38 | 318 |
| 2 | 86 | 63 | 63 | 62 | 88,200 | 166 | 27 | 1 | 68 | 262 |
| 3 | 83 | 61 | 63 | 62 | 89,500 | 180 | 15 | 0 | 44 | 239 |
| 4 | 87 | 55 | 63 | 62 | 70,800 | 208 | 18 | 0 | 40 | 266 |
| 5 | 89 | 54 | 63 | 62 | 77,100 | 210 | 22 | 1 | 68 | 301 |
| 6 | 95 | 65 | 63 | 62 | 60,500 | 88 | 10 | 1 | 38 | 137 |
| 7 | 72 | 66 | 63 | 62 | 68,500 | 147 | 15 | 0 | 68 | 230 |
| 8 | 70 | 47 | 63 | 62 | 43,400 | 136 | 12 | 2 | 76 | 226 |
| 9 | 77 | 46 | 63 | 62 | 54,900 | 253 | 28 | 0 | 86 | 367 |
| 10 | 66 | 61 | 62 | 61 | 77,800 | 291 | 9 | 3 | 92 | 395 |
| 11 | 69 | 54 | 62 | 61 | 67,900 | 179 | 11 | 2 | 87 | 279 |
| 12 | 69 | 49 | 61 | 60 | 62,200 | 269 | 3 | 0 | 70 | 342 |
| 13 | 72 | 60 | 61 | 61 | 56,000 | 394 | 7 | 4 | 92 | 497 |
| 14 | 69 | 51 | 61 | 60 | 44,300 | 306 | 8 | 11 | 97 | 422 |
| 15 | 74 | 51 | 61 | 60 | 44,300 | 142 | 7 | 5 | 79 | 233 |
| 16 | 86 | 52 | 61 | 60 | 45,200 | 187 | 9 | 7 | 96 | 299 |
| 17 | 82 | 50 | 62 | 61 | 58,800 | 245 | 6 | 7 | 80 | 338 |
| 18 | 84 | 55 | 62 | 61 | 44,300 | 163 | 1 | 5 | 56 | 225 |
| 19 | 86 | 70 | 62 | 62 | 41,900 | 186 | 2 | 11 | 121 | 320 |
| 20 | 90 | 59 | 62 | 62 | 35,800 | 244 | 4 | 26 | 123 | 397 |
| 21 | 91 | 63 | 62 | 62 | 42,300 | 212 | 2 | 25 | 132 | 371 |
| 22 | 85 | 64 | 63 | 62 | 35,900 | 406 | 5 | 26 | 153 | 590 |
| 23 | 84 | 53 | 63 | 62 | 38,200 | 197 | 5 | 36 | 194 | 432 |
| 24 | 86 | 54 | 63 | 62 | 48,700 | 194 | 4 | 47 | 234 | 479 |
| 25 | 80 | 54 | 64 | 63 | 51,200 | 160 | 3 | 31 | 212 | 406 |
| 26 | 85 | 54 | 63 | 63 | 51,200 | 263 | 4 | 66 | 188 | 521 |
| 27 | 75 | 61 | 63 | 62 | 48,200 | 153 | 3 | 70 | 262 | 488 |
| 28 | 60 | 53 | 62 | 62 | 47,800 | 168 | 3 | 56 | 284 | 511 |
| 29 | 67 | 48 | 62 | 61 | 53,800 | 107 | 3 | 36 | 141 | 287 |
| 30 | 72 | 43 | 62 | 61 | 44,800 | 64 | 1 | 25 | 110 | 200 |

¹ Air temperatures, taken with pocket thermometer, are given in degrees Fahrenheit.

² Water temperatures, taken with recording thermograph at middle ladder, are given in degrees Fahrenheit.

Table 14.--Daily temperatures, stream flow, and fish count data, Rock Island Dam, October 1962

| Date | Air temperatures ¹ | | Water temperatures ² | | Stream flow C. f. s. | Chinook Number | Sockeye Number | Coho Number | Steelhead Number | Total Number |
|--------|-------------------------------|------------|---------------------------------|------------|-------------------------|-------------------|-------------------|----------------|---------------------|-----------------|
| | Max. °F | Min. °F | Max. °F | Min. °F | | | | | | |
| Oct. 1 | 74 | 45 | -- | -- | 49,700 | 92 | 2 | 26 | 184 | 304 |
| 2 | 75 | 51 | -- | -- | 45,600 | 77 | 1 | 27 | 156 | 261 |
| 3 | 70 | 53 | -- | -- | 45,600 | 91 | 2 | 5 | 153 | 251 |
| 4 | 69 | 47 | -- | -- | 47,800 | 24 | 0 | 33 | 137 | 194 |
| 5 | 64 | 44 | -- | -- | 46,500 | 62 | 1 | 17 | 116 | 196 |
| 6 | 63 | 48 | -- | -- | 34,700 | 42 | 0 | 18 | 91 | 151 |
| 7 | 51 | 38 | -- | -- | 40,200 | 31 | 3 | 18 | 60 | 112 |
| 8 | 58 | 35 | 59 | 59 | 45,600 | 16 | 1 | 9 | 80 | 106 |
| 9 | 58 | 44 | 59 | 59 | 45,600 | 15 | 0 | 13 | 86 | 114 |
| 10 | 51 | 44 | 59 | 58 | 38,000 | 25 | 2 | 8 | 76 | 111 |
| 11 | 49 | 45 | 59 | 58 | 37,300 | 11 | 0 | 8 | 39 | 58 |
| 12 | 50 | 45 | 58 | 57 | 48,700 | 12 | 1 | 9 | 56 | 78 |
| 13 | 65 | 46 | 58 | 57 | 46,900 | 20 | 1 | 7 | 51 | 79 |
| 14 | 62 | 43 | 57 | 57 | 69,600 | 19 | 0 | 3 | 37 | 59 |
| 15 | 62 | 45 | 58 | 57 | 54,300 | 14 | 0 | 7 | 60 | 81 |
| 16 | 58 | 37 | 58 | 57 | 39,400 | 9 | 0 | 2 | 54 | 65 |
| 17 | 64 | 41 | 58 | 57 | 50,200 | 16 | 0 | 0 | 47 | 63 |
| 18 | 63 | 44 | 58 | 57 | 46,500 | 9 | 0 | 3 | 22 | 34 |
| 19 | 58 | 43 | 58 | 58 | 52,200 | 11 | 0 | 1 | 17 | 29 |
| 20 | 64 | 47 | 58 | 58 | 48,200 | 14 | 0 | 2 | 42 | 58 |
| 21 | 70 | 47 | 58 | 58 | 46,100 | 6 | 0 | 0 | 23 | 29 |
| 22 | 68 | 48 | 59 | 59 | 50,200 | 10 | 0 | 0 | 47 | 57 |
| 23 | 70 | 43 | 59 | 58 | 46,900 | 21 | 0 | 1 | 51 | 73 |
| 24 | 67 | 44 | 59 | 58 | 75,900 | 6 | 0 | 3 | 34 | 43 |
| 25 | 64 | 45 | 58 | 58 | 75,900 | 10 | 0 | 5 | 53 | 68 |
| 26 | 58 | 42 | 58 | 58 | 74,600 | 2 | 0 | 4 | 34 | 40 |
| 27 | 54 | 42 | 58 | 58 | 55,400 | 5 | 0 | 3 | 25 | 33 |

¹ Air temperatures, taken with pocket thermometer, are given in degrees Fahrenheit.

² Water temperatures, taken with recording thermograph at middle ladder, are given in degrees Fahrenheit.

Table 15.--Miscellaneous fish count, Rock Island Dam, May 1962

[Number of fish]

| Date | Sucker | Squawfish | Whitefish | Chub | Carp | Lamprey | Shad | Dolly Varden | Rainbow trout | Total |
|-------|--------|-----------|-----------|------|------|---------|------|--------------|---------------|--------|
| May 1 | 4 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| 2 | 6 | 1 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 48 |
| 3 | 4 | 0 | 57 | 0 | 0 | 0 | 0 | 0 | 0 | 61 |
| 4 | 18 | 0 | 150 | 0 | 0 | 0 | 0 | 0 | 0 | 168 |
| 5 | 10 | 0 | 111 | 0 | 0 | 0 | 0 | 0 | 0 | 121 |
| 6 | 16 | 0 | 85 | 0 | 0 | 0 | 0 | 0 | 0 | 101 |
| 7 | 30 | 9 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 111 |
| 8 | 14 | 13 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 97 |
| 9 | 109 | 2 | 68 | 0 | 0 | 0 | 0 | 0 | 0 | 179 |
| 10 | 53 | 0 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 103 |
| 11 | 21 | 6 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 79 |
| 12 | 22 | 4 | 93 | 0 | 0 | 0 | 0 | 0 | 0 | 119 |
| 13 | 38 | 6 | 108 | 0 | 0 | 0 | 0 | 0 | 1 | 153 |
| 14 | 119 | 56 | 96 | 0 | 0 | 0 | 0 | 0 | 0 | 271 |
| 15 | 371 | 18 | 55 | 0 | 0 | 0 | 0 | 0 | 0 | 444 |
| 16 | 248 | 13 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 294 |
| 17 | 266 | 69 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 373 |
| 18 | 299 | 40 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 377 |
| 19 | 97 | 19 | 32 | 0 | 0 | 0 | 0 | 0 | 1 | 149 |
| 20 | 40 | 7 | 44 | 0 | 0 | 0 | 0 | 0 | 0 | 91 |
| 21 | 44 | 11 | 18 | 0 | 0 | 0 | 0 | 0 | 1 | 74 |
| 22 | 197 | 19 | 43 | 1 | 0 | 0 | 0 | 0 | 0 | 260 |
| 23 | 172 | 12 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 215 |
| 24 | 1,264 | 5 | 27 | 34 | 0 | 0 | 0 | 0 | 0 | 1,330 |
| 25 | 1,196 | 13 | 35 | 15 | 0 | 0 | 0 | 0 | 0 | 1,259 |
| 26 | 1,384 | 49 | 37 | 28 | 0 | 0 | 0 | 0 | 3 | 1,501 |
| 27 | 1,762 | 96 | 17 | 15 | 0 | 0 | 0 | 0 | 0 | 1,890 |
| 28 | 501 | 17 | 20 | 47 | 0 | 0 | 0 | 0 | 0 | 585 |
| 29 | 227 | 10 | 12 | 27 | 0 | 0 | 0 | 0 | 1 | 277 |
| 30 | 117 | 34 | 12 | 2 | 0 | 0 | 0 | 0 | 0 | 165 |
| 31 | 166 | 31 | 4 | 8 | 0 | 0 | 0 | 0 | 0 | 209 |
| Total | 8,815 | 560 | 1,571 | 177 | 0 | 0 | 0 | 0 | 7 | 11,130 |

Table 16.--Miscellaneous fish count, Rock Island Dam, June 1962

[Number of fish]

| Date | Sucker | Squawfish | Whitefish | Chub | Carp | Lamprey | Shad | Dolly Varden | Rainbow trout | Total |
|--------|--------|-----------|-----------|-------|------|---------|------|--------------|---------------|--------|
| June 1 | 261 | 40 | 7 | 36 | 0 | 0 | 0 | 0 | 0 | 344 |
| 2 | 714 | 54 | 30 | 36 | 0 | 0 | 0 | 0 | 0 | 834 |
| 3 | 155 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 169 |
| 4 | 31 | 3 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 40 |
| 5 | 195 | 16 | 9 | 26 | 0 | 0 | 0 | 1 | 0 | 247 |
| 6 | 125 | 38 | 12 | 20 | 0 | 0 | 0 | 0 | 0 | 195 |
| 7 | 675 | 106 | 33 | 34 | 0 | 0 | 0 | 0 | 0 | 848 |
| 8 | 3,520 | 33 | 39 | 37 | 0 | 0 | 0 | 0 | 0 | 3,629 |
| 9 | 884 | 77 | 40 | 56 | 0 | 0 | 0 | 0 | 0 | 1,057 |
| 10 | 592 | 75 | 12 | 54 | 0 | 0 | 0 | 0 | 0 | 733 |
| 11 | 371 | 22 | 6 | 24 | 0 | 0 | 0 | 0 | 0 | 423 |
| 12 | 218 | 44 | 9 | 14 | 0 | 0 | 0 | 0 | 0 | 285 |
| 13 | 133 | 45 | 13 | 11 | 0 | 0 | 0 | 0 | 0 | 202 |
| 14 | 107 | 106 | 22 | 14 | 0 | 0 | 0 | 0 | 0 | 249 |
| 15 | 397 | 162 | 56 | 79 | 0 | 0 | 0 | 0 | 0 | 694 |
| 16 | 1,988 | 349 | 34 | 214 | 3 | 0 | 0 | 0 | 0 | 2,588 |
| 17 | 1,083 | 123 | 12 | 93 | 0 | 0 | 0 | 0 | 1 | 1,312 |
| 18 | 479 | 118 | 12 | 64 | 3 | 0 | 0 | 0 | 1 | 677 |
| 19 | 309 | 133 | 4 | 92 | 2 | 0 | 0 | 0 | 0 | 540 |
| 20 | 984 | 222 | 35 | 32 | 1 | 1 | 0 | 2 | 0 | 1,277 |
| 21 | 1,734 | 279 | 21 | 80 | 0 | 0 | 0 | 0 | 0 | 2,114 |
| 22 | 1,859 | 179 | 8 | 57 | 1 | 0 | 0 | 0 | 1 | 2,105 |
| 23 | 1,565 | 126 | 20 | 30 | 6 | 0 | 0 | 0 | 0 | 1,747 |
| 24 | 1,237 | 125 | 13 | 36 | 1 | 0 | 0 | 0 | 0 | 1,412 |
| 25 | 1,672 | 169 | 19 | 96 | 3 | 2 | 0 | 0 | 1 | 1,962 |
| 26 | 1,838 | 153 | 29 | 86 | 5 | 2 | 0 | 0 | 0 | 2,113 |
| 27 | 942 | 166 | 16 | 45 | 4 | 3 | 0 | 0 | 0 | 1,176 |
| 28 | 1,652 | 143 | 21 | 30 | 2 | 1 | 0 | 0 | 0 | 1,849 |
| 29 | 1,573 | 99 | 12 | 59 | 3 | 1 | 0 | 0 | 0 | 1,747 |
| 30 | 1,147 | 63 | 26 | 37 | 19 | 1 | 0 | 0 | 0 | 1,293 |
| Total | 28,440 | 3,281 | 570 | 1,499 | 53 | 11 | 0 | 3 | 4 | 33,861 |

Table 17.--Miscellaneous fish count, Rock Island Dam, July 1962

[Number of fish.]

| Date | Sucker | Squawfish | Whitefish | Chub | Carp | Lamprey | Shad | Dolly Varden | Rainbow Trout | Total |
|--------|--------|-----------|-----------|-------|-------|---------|------|--------------|---------------|--------|
| July 1 | 1,063 | 132 | 27 | 89 | 15 | 3 | 0 | 0 | 1 | 1,330 |
| 2 | 1,886 | 64 | 4 | 39 | 12 | 0 | 0 | 1 | 0 | 1,006 |
| 3 | 870 | 60 | 7 | 40 | 11 | 0 | 0 | 0 | 1 | 989 |
| 4 | 743 | 44 | 7 | 35 | 20 | 0 | 0 | 0 | 0 | 849 |
| 5 | 554 | 43 | 3 | 39 | 8 | 0 | 0 | 0 | 0 | 647 |
| 6 | 1,113 | 117 | 13 | 83 | 20 | 0 | 0 | 0 | 0 | 1,346 |
| 7 | 1,729 | 139 | 21 | 49 | 15 | 0 | 0 | 0 | 0 | 953 |
| 8 | 3,091 | 311 | 4 | 152 | 24 | 5 | 0 | 0 | 8 | 3,595 |
| 9 | 3,436 | 142 | 3 | 154 | 17 | 0 | 0 | 0 | 0 | 3,752 |
| 10 | 2,352 | 114 | 7 | 93 | 31 | 1 | 0 | 0 | 0 | 2,598 |
| 11 | 1,239 | 103 | 7 | 66 | 40 | 1 | 0 | 0 | 0 | 1,456 |
| 12 | 1,767 | 101 | 7 | 69 | 31 | 3 | 0 | 0 | 0 | 976 |
| 13 | 410 | 107 | 5 | 58 | 24 | 5 | 0 | 0 | 0 | 613 |
| 14 | 457 | 77 | 9 | 34 | 24 | 1 | 0 | 0 | 0 | 595 |
| 15 | 774 | 115 | 0 | 94 | 26 | 3 | 0 | 0 | 0 | 1,012 |
| 16 | 627 | 40 | 5 | 35 | 38 | 2 | 0 | 0 | 1 | 748 |
| 17 | 324 | 40 | 4 | 45 | 30 | 0 | 0 | 0 | 0 | 443 |
| 18 | 237 | 26 | 12 | 22 | 20 | 0 | 0 | 0 | 0 | 317 |
| 19 | 183 | 41 | 4 | 49 | 16 | 0 | 0 | 0 | 0 | 293 |
| 20 | 174 | 53 | 17 | 32 | 66 | 0 | 0 | 0 | 0 | 342 |
| 21 | 271 | 108 | 52 | 122 | 32 | 0 | 0 | 0 | 0 | 585 |
| 22 | 734 | 99 | 25 | 95 | 24 | 0 | 0 | 0 | 0 | 977 |
| 23 | 1,112 | 212 | 6 | 143 | 32 | 1 | 0 | 0 | 1 | 1,507 |
| 24 | 1,540 | 101 | 8 | 122 | 62 | 2 | 0 | 1 | 0 | 1,836 |
| 25 | 640 | 57 | 5 | 63 | 22 | 3 | 0 | 0 | 0 | 790 |
| 26 | 560 | 56 | 12 | 68 | 40 | 1 | 0 | 0 | 0 | 737 |
| 27 | 495 | 123 | 36 | 66 | 58 | 4 | 0 | 0 | 0 | 782 |
| 28 | 438 | 128 | 24 | 104 | 60 | 8 | 0 | 0 | 0 | 762 |
| 29 | 408 | 139 | 19 | 134 | 63 | 12 | 0 | 0 | 3 | 778 |
| 30 | 856 | 83 | 10 | 47 | 98 | 5 | 0 | 0 | 0 | 1,099 |
| 31 | 1,081 | 94 | 10 | 40 | 92 | 6 | 0 | 0 | 2 | 1,325 |
| Total | 28,164 | 3,069 | 368 | 2,281 | 1,071 | 66 | 0 | 2 | 17 | 35,038 |

Table 18.--Miscellaneous fish count, Rock Island Dam, August 1962

[Number of fish.]

| Date | Sucker | Squawfish | Whitefish | Chub | Carp | Lamprey | Shad | Dolly Varden | Rainbow Trout | Total |
|--------|--------|-----------|-----------|-------|------|---------|------|--------------|---------------|--------|
| Aug. 1 | 543 | 71 | 14 | 16 | 37 | 7 | 0 | 0 | 0 | 688 |
| 2 | 471 | 49 | 17 | 11 | 38 | 4 | 0 | 0 | 1 | 591 |
| 3 | 443 | 64 | 11 | 16 | 77 | 3 | 0 | 1 | 2 | 617 |
| 4 | 226 | 12 | 7 | 13 | 25 | 26 | 0 | 0 | 0 | 309 |
| 5 | 109 | 23 | 9 | 16 | 26 | 38 | 0 | 0 | 1 | 222 |
| 6 | 172 | 26 | 10 | 16 | 17 | 3 | 0 | 0 | 2 | 246 |
| 7 | 828 | 42 | 19 | 14 | 25 | 10 | 0 | 0 | 0 | 938 |
| 8 | 788 | 45 | 16 | 11 | 26 | 5 | 0 | 0 | 0 | 891 |
| 9 | 348 | 20 | 12 | 2 | 21 | 2 | 0 | 0 | 0 | 405 |
| 10 | 710 | 14 | 13 | 10 | 22 | 5 | 0 | 0 | 0 | 774 |
| 11 | 949 | 34 | 35 | 10 | 22 | 18 | 0 | 0 | 0 | 1,068 |
| 12 | 1,362 | 67 | 48 | 23 | 22 | 9 | 0 | 0 | 0 | 1,531 |
| 13 | 942 | 26 | 31 | 19 | 10 | 5 | 0 | 0 | 1 | 1,034 |
| 14 | 829 | 70 | 43 | 101 | 13 | 8 | 1 | 0 | 1 | 1,066 |
| 15 | 711 | 46 | 33 | 67 | 8 | 39 | 0 | 0 | 1 | 905 |
| 16 | 687 | 85 | 61 | 133 | 13 | 22 | 0 | 0 | 0 | 1,001 |
| 17 | 492 | 57 | 34 | 62 | 9 | 62 | 0 | 0 | 1 | 717 |
| 18 | 547 | 68 | 51 | 134 | 8 | 101 | 0 | 0 | 0 | 909 |
| 19 | 351 | 50 | 31 | 117 | 9 | 63 | 0 | 0 | 1 | 622 |
| 20 | 449 | 61 | 55 | 105 | 6 | 206 | 0 | 0 | 0 | 882 |
| 21 | 326 | 51 | 54 | 135 | 12 | 98 | 0 | 0 | 0 | 676 |
| 22 | 385 | 39 | 24 | 68 | 12 | 42 | 0 | 0 | 0 | 570 |
| 23 | 518 | 54 | 20 | 64 | 19 | 72 | 0 | 0 | 0 | 747 |
| 24 | 435 | 40 | 27 | 48 | 18 | 107 | 0 | 0 | 0 | 675 |
| 25 | 548 | 109 | 39 | 92 | 24 | 90 | 0 | 0 | 0 | 902 |
| 26 | 365 | 74 | 33 | 89 | 11 | 82 | 0 | 0 | 0 | 654 |
| 27 | 321 | 26 | 28 | 28 | 6 | 44 | 0 | 0 | 2 | 455 |
| 28 | 365 | 33 | 28 | 105 | 5 | 19 | 0 | 0 | 0 | 555 |
| 29 | 840 | 76 | 18 | 107 | 3 | 44 | 0 | 0 | 1 | 1,089 |
| 30 | 625 | 61 | 32 | 132 | 8 | 53 | 0 | 0 | 0 | 911 |
| 31 | 737 | 57 | 25 | 116 | 3 | 93 | 0 | 0 | 0 | 1,031 |
| Total | 17,422 | 1,550 | 878 | 1,880 | 555 | 1,380 | 1 | 1 | 14 | 23,681 |

Table 19.--Miscellaneous fish count, Rock Island Dam, September 1962

[Number of fish]

| Date | Sucker | Squeawfish | Whitefish | Chub | Carp | Lamprey | Shad | Dolly Varden | Rainbow trout | Total |
|---------|--------|------------|-----------|-------|------|---------|------|--------------|---------------|--------|
| Sept. 1 | 775 | 76 | 43 | 143 | 6 | 157 | 0 | 0 | 0 | 1,200 |
| 2 | 785 | 52 | 43 | 107 | 4 | 48 | 0 | 1 | 0 | 1,040 |
| 3 | 540 | 26 | 12 | 111 | 5 | 58 | 0 | 0 | 0 | 752 |
| 4 | 579 | 14 | 43 | 199 | 1 | 124 | 0 | 0 | 0 | 960 |
| 5 | 733 | 27 | 43 | 194 | 0 | 91 | 0 | 0 | 0 | 1,088 |
| 6 | 638 | 41 | 53 | 208 | 2 | 67 | 0 | 0 | 0 | 1,009 |
| 7 | 782 | 14 | 65 | 160 | 0 | 54 | 0 | 0 | 0 | 1,075 |
| 8 | 777 | 44 | 85 | 161 | 3 | 18 | 0 | 0 | 0 | 1,088 |
| 9 | 635 | 22 | 124 | 276 | 4 | 14 | 0 | 0 | 0 | 1,075 |
| 10 | 765 | 27 | 74 | 280 | 4 | 53 | 0 | 0 | 0 | 1,203 |
| 11 | 387 | 7 | 67 | 133 | 2 | 17 | 0 | 0 | 1 | 614 |
| 12 | 364 | 27 | 77 | 132 | 2 | 75 | 0 | 0 | 0 | 677 |
| 13 | 485 | 20 | 51 | 45 | 2 | 18 | 0 | 0 | 1 | 622 |
| 14 | 657 | 27 | 60 | 98 | 2 | 39 | 0 | 0 | 0 | 883 |
| 15 | 464 | 39 | 72 | 120 | 1 | 25 | 0 | 0 | 0 | 721 |
| 16 | 608 | 61 | 145 | 236 | 1 | 77 | 0 | 0 | 0 | 1,128 |
| 17 | 392 | 52 | 99 | 116 | 2 | 122 | 0 | 0 | 0 | 783 |
| 18 | 358 | 51 | 195 | 137 | 1 | 8 | 0 | 0 | 0 | 750 |
| 19 | 803 | 98 | 231 | 147 | 0 | 5 | 0 | 0 | 0 | 1,284 |
| 20 | 437 | 41 | 277 | 45 | 0 | 7 | 0 | 0 | 1 | 808 |
| 21 | 409 | 37 | 407 | 62 | 6 | 6 | 0 | 0 | 1 | 928 |
| 22 | 205 | 41 | 346 | 62 | 2 | 33 | 0 | 1 | 1 | 690 |
| 23 | 211 | 81 | 245 | 27 | 7 | 23 | 0 | 0 | 0 | 594 |
| 24 | 295 | 89 | 345 | 163 | 2 | 38 | 0 | 0 | 0 | 932 |
| 25 | 295 | 83 | 577 | 128 | 0 | 27 | 0 | 0 | 0 | 1,110 |
| 26 | 537 | 132 | 445 | 87 | 4 | 17 | 0 | 0 | 0 | 1,222 |
| 27 | 200 | 165 | 581 | 103 | 1 | 5 | 0 | 0 | 0 | 1,055 |
| 28 | 371 | 82 | 569 | 82 | 8 | 6 | 0 | 0 | 0 | 1,118 |
| 29 | 92 | 28 | 696 | 36 | 0 | 27 | 0 | 0 | 1 | 880 |
| 30 | 131 | 77 | 884 | 56 | 0 | 25 | 0 | 0 | 0 | 1,173 |
| Total | 14,710 | 1,581 | 6,954 | 3,854 | 72 | 1,284 | 0 | 2 | 5 | 28,462 |

Table 20.--Miscellaneous fish count, Rock Island Dam, October 1962

[Number of fish]

| Date | Sucker | Squawfish | Whitefish | Chub | Carp | Lamprey | Shad | Dolly Varden | Rainbow trout | Total |
|--------|--------|-----------|-----------|------|------|---------|------|--------------|---------------|--------|
| Oct. 1 | 564 | 60 | 651 | 39 | 0 | 38 | 0 | 0 | 0 | 1,352 |
| 2 | 238 | 39 | 500 | 61 | 1 | 9 | 0 | 0 | 0 | 848 |
| 3 | 158 | 35 | 600 | 34 | 0 | 18 | 0 | 0 | 0 | 845 |
| 4 | 230 | 57 | 666 | 62 | 0 | 32 | 0 | 0 | 0 | 1,047 |
| 5 | 146 | 59 | 823 | 30 | 0 | 36 | 0 | 0 | 0 | 1,094 |
| 6 | 125 | 25 | 647 | 29 | 1 | 29 | 0 | 0 | 0 | 856 |
| 7 | 229 | 73 | 626 | 29 | 0 | 6 | 0 | 0 | 0 | 963 |
| 8 | 16 | 38 | 1,592 | 16 | 0 | 1 | 0 | 0 | 0 | 1,663 |
| 9 | 29 | 59 | 1,265 | 17 | 0 | 3 | 0 | 0 | 0 | 1,373 |
| 10 | 111 | 55 | 785 | 2 | 0 | 10 | 0 | 0 | 0 | 963 |
| 11 | 104 | 52 | 505 | 6 | 0 | 5 | 0 | 0 | 1 | 673 |
| 12 | 31 | 16 | 791 | 5 | 0 | 1 | 0 | 0 | 0 | 844 |
| 13 | 20 | 22 | 588 | 22 | 1 | 3 | 0 | 0 | 1 | 657 |
| 14 | 20 | 20 | 1,057 | 8 | 0 | 6 | 0 | 0 | 0 | 1,111 |
| 15 | 71 | 49 | 1,242 | 4 | 0 | 1 | 0 | 1 | 1 | 1,369 |
| 16 | 50 | 13 | 840 | 3 | 1 | 2 | 0 | 0 | 1 | 910 |
| 17 | 324 | 21 | 744 | 2 | 0 | 3 | 0 | 1 | 0 | 1,095 |
| 18 | 95 | 32 | 836 | 13 | 0 | 12 | 0 | 0 | 0 | 988 |
| 19 | 21 | 12 | 928 | 5 | 0 | 6 | 0 | 0 | 0 | 972 |
| 20 | 30 | 15 | 1,325 | 5 | 0 | 3 | 0 | 0 | 0 | 1,378 |
| 21 | 44 | 39 | 1,230 | 2 | 0 | 7 | 0 | 0 | 0 | 1,322 |
| 22 | 49 | 33 | 863 | 6 | 0 | 6 | 0 | 0 | 0 | 957 |
| 23 | 29 | 15 | 1,350 | 0 | 1 | 3 | 0 | 0 | 0 | 1,398 |
| 24 | 40 | 10 | 1,566 | 3 | 0 | 2 | 0 | 0 | 0 | 1,621 |
| 25 | 38 | 34 | 2,720 | 5 | 0 | 2 | 0 | 0 | 0 | 2,799 |
| 26 | 20 | 12 | 1,752 | 5 | 0 | 8 | 0 | 0 | 0 | 1,797 |
| 27 | 18 | 8 | 1,476 | 1 | 0 | 4 | 0 | 0 | 0 | 1,507 |
| Total | 2,850 | 903 | 27,968 | 414 | 5 | 256 | 0 | 2 | 4 | 32,402 |

Table 21.--Injured fish observed at Rock Island Dam, May 1-October 27, 1962

[Number of fish]

| Date | Species | Total fish counted | Injured fish observed | | | | |
|-------------|---------------|--------------------|-----------------------|---------------|--------------|-------|----|
| | | | Left ladder | Middle ladder | Right ladder | Total | |
| May 1-15 | Chinook | 3,436 | 30 | 4 | 4 | 38 | |
| | Chinook jacks | 164 | | | | | |
| | Steelhead | 463 | 2 | 2 | 1 | | 5 |
| May 16-31 | Chinook | 2,037 | 15 | 2 | | 17 | |
| | Chinook jacks | 230 | | | | | |
| | Sockeye | 2 | | | | | |
| | Steelhead | 268 | | | | | |
| June 1-15 | Chinook | 622 | 11 | 1 | | 12 | |
| | Chinook jacks | 298 | | | | | |
| | Sockeye | 5 | | | | | |
| | Steelhead | 41 | | | | | |
| June 16-30 | Chinook | 1,696 | 16 | 1 | 5 | 22 | |
| | Chinook jacks | 291 | 1 | | | | 1 |
| | Sockeye | 45 | | | | | |
| | Steelhead | 17 | | | | | |
| July 1-15 | Chinook | 3,885 | 30 | 2 | 12 | 44 | |
| | Chinook jacks | 337 | | | | | |
| | Sockeye | 3,392 | 3 | | 2 | | 5 |
| | Steelhead | 14 | | | | | |
| July 16-31 | Chinook | 2,691 | 16 | 3 | 1 | 20 | |
| | Chinook jacks | 1,263 | 1 | | | | 1 |
| | Sockeye | 21,370 | 21 | 7 | 26 | | 54 |
| | Steelhead | 144 | | | | | |
| Aug. 1-15 | Chinook | 5,311 | 27 | 4 | 7 | 38 | |
| | Chinook jacks | 1,804 | | | | | |
| | Sockeye | 3,380 | 13 | 2 | 8 | | 23 |
| | Steelhead | 533 | | | | | |
| Aug. 16-31 | Chinook | 2,081 | 11 | 2 | 2 | 15 | |
| | Chinook jacks | 1,176 | | | | | |
| | Sockeye | 763 | 7 | | 1 | | 8 |
| | Steelhead | 851 | | | | | |
| Sept. 1-15 | Chinook | 2,354 | 12 | 4 | 1 | 17 | |
| | Chinook jacks | 860 | | | | | |
| | Sockeye | 227 | 4 | | | | 4 |
| | Steelhead | 1,043 | 1 | | | | 1 |
| | Coho | 30 | | | | | |
| Sept. 16-30 | Chinook | 2,355 | 8 | 2 | 3 | 13 | |
| | Chinook jacks | 594 | | | | | |
| | Sockeye | 55 | 1 | | | | 1 |
| | Steelhead | 2,386 | 2 | | 1 | | 3 |
| | Coho | 474 | 1 | | | | 1 |
| Oct. 1-15 | Chinook | 463 | 6 | | 4 | 10 | |
| | Chinook jacks | 88 | | | | | |
| | Sockeye | 14 | | | | | |
| | Steelhead | 1,382 | 2 | | 3 | | 5 |
| | Coho | 208 | 2 | | | | 2 |
| Oct. 16-27 | Chinook | 106 | 2 | | | 2 | |
| | Chinook jacks | 13 | | | | | |
| | Steelhead | 449 | 2 | | | | 2 |
| | Coho | 24 | | | | | |
| Totals | | 71,735 | 247 | 36 | 81 | 364 | |

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